and varying survival rates according to radiation field. **RESULTS:** We compared two strategies: Strategy 1) pelvic CRT for all patients or Strategy 2) nodal staging surgery, then extended-field CRT when PALN metastasis is found; otherwise, pelvic CRT. ICER for strategy 2 compared to strategy 1 was $19,505 per quality-adjusted life year (QALY). Nodal staging surgery was cost-effective at the $50,000 willingness-to-pay threshold as long as generous survival reduction (>17%) is found in patients who underwent only pelvic CRT despite occult PALN metastasis. The model was insensitive to change in performance of PET/CT and postoperative complication rates. **CONCLUSIONS:** Nodal staging surgery before definite CRT is potentially cost-effective in Korea when PET/CT shows no evidence of para-aortic lymph node metastasis. Prospective trials are warranted to transfer these results into guidelines.

PCN19

COST-EFFECTIVENESS OF FIRST-LINE THERAPY FOR ADVANCED NON-SMALL CELL LUNG CANCER (NSCLC)

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OBJECTIVES: To assess the cost-effectiveness of Afatinib vs. comparators in the first-line treatment for patients with non-small cell lung cancer (NSCLC) harbouring epidermal growth factor receptor (EGFR) mutations. **METHODS:** A cost-effectiveness model was applied to assess the costs and effects of afatinib. Data related to medical resource use, efficacy of the drugs and health related quality-of-life status came from the clinical studies and supported by the results of a Network Meta-Analysis (NMA). Direct cost data was obtained from the Bureau of National Health Insurance (BNHI) and NHI claims data released by the Collaboration Center of Health Information Application. Outcomes included life-years, quality-adjusted life years (QALYs), medical costs and incremental cost-effectiveness ratios (ICERs). The single-payer (BNHI) perspective is assumed and costs are expressed in New Taiwan dollars (NT$). The discount rate of costs and effects is 5%. **RESULTS:** Treatment with afatinib in the 1st line setting extends time in progression-free survival (PFS). Compared to gefitinib, patients treated with afatinib in the 1st line setting have an increase of 0.05 quality-adjusted life-years (QALYs) and the additional cost is NT$21,350.59, yielding an ICER of NT$457,768.67 per QALY gained. Compared to erlotinib, patients treated with afatinib have an increase of 0.02 QALYs with less cost of NT$-56,216. **CONCLUSIONS:** The results provide decision makers with information about the cost-effectiveness of taking afatinib as first-line therapy for advanced stage NSCLC by direct comparison of two EGFR-TKIs and cisplatin/pemetrexed. From the perspective of the single payer, the afatinib could be a cost-effectiveness strategy compared with erlotinib and gefitinib for the 1st line treatment of advanced NSCLC.

PCN20

COST-EFFECTIVENESS OF LENALIDOMIDE-PLUS-DEXAMETHASONE IN MULTIPLE MYELOMA PATIENTS WHO HAVE RECEIVED AT LEAST ONE PRIOR THERAPY: A SOUTH KOREAN PERSPECTIVE

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OBJECTIVES: In this study a comprehensive assessment of the cost-effectiveness of lenalidomide-plus-dexamethasone compared to dexamethasone, as second-line or greater than second-line therapy in relapsed/refractory multiple myeloma (rrMM) patients was performed, from the perspective of the South Korean National Health System. **METHODS:** A Markov-type model was designed to assess the long-term costs and effectiveness of lenalidomide-plus-dexamethasone and dexamethasone, using patient-level data from the MM-009/MM-010 randomized controlled trials. Due to potential crossover-induced bias by subsequent therapies, overall survival (OS) was estimated using a quantitative relationship between progression-free-survival and OS (censored normal weighted Tobit regression model, based on 153 MM studies containing 230 treatment arms). Only direct costs were considered (drugs, adverse events and disease monitoring). Effectiveness was measured in life years (LY) and quality-adjusted life years (QALY). Costs were converted to United-States dollars (1USD=1,071.33WON). Annual discount rates were set at 5% for costs and effectiveness. Probabilistic sensitivity analysis (PSA) was conducted with Monte Carlo simulations. **RESULTS:** For the patient population with one previous therapy lenalidomide-plus-dexamethasone is estimated to add substantial benefits to dexamethasone, with expected gains of 1.83QALY and 2.50LY, offset by a mean incremental cost of $55,387. Corresponding incremental cost-effectiveness ratios are estimated at $30,195/QALY and $22,148/LY. PSA revealed a >95% probability of lenalidomide-plus-dexamethasone being cost-effective in comparison to dexamethasone at a $40,000 threshold. These results are robust against sensitivity analyses in turns of patient sub-populations and different crossover correction techniques (simulated treatment comparison; rank preserving structural failure time models). **CONCLUSIONS:** Lenalidomide-plus-dexamethasone can be regarded a valuable treatment option for second or greater line therapy in rrMM patients.

PCN21

ECONOMIC EVALUATION OF PRIMARY PROPHYLAXIS USING FILGRASTIM VERSUS PEGFILGRASTIM IN PATIENTS WITH SOLID TUMOR CANCER: A SYSTEMATIC LITERATURE REVIEW

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OBJECTIVES: Evidence suggests that primary prophylaxis with filgrastim (Neupogen®, administered daily for 10-11 days per chemotherapy cycle) or pegfilgrastim (Neulasta®, administered once per chemotherapy cycle) is equally effective.[1-4] Patients often receive shorter (<7 days) courses of filgrastim in clinical practice.[5] Using filgrastim for fewer days may reduce costs, but it has been associated with an increased hospitalization risk.[5] Economic evaluations (EEs) may be used to guide decisions in resource allocation. The objective of this review is to identify and characterize the EEs of primary prophylaxis with filgrastim versus pegfilgrastim in patients with solid tumor cancer receiving myelosuppressive chemotherapy. **METHODS:** We performed a systematic literature search of the EMBASE, MEDLINE, Cochrane Library, Google Scholar, ABI/Inform, and the Web of Science using such search terms "filgrastim," "pegfilgrastim," "cost analysis," and "economic evaluation." Studies were limited to primary research in patients with solid tumor cancer, specifically, studies comparing filgrastim with pegfilgrastim and resulting in full manuscripts. Identified studies were evaluated by the Drummond checklist[6] and characterized by study perspectives, time horizon, data sources, and funding. **RESULTS:** Six studies fulfilled the inclusion criteria. Most studies modeled hypothetical cohorts of women aged 30-80 years with breast cancer (Stages I-III) from a payer's perspective. The median Drummond score was 9 of 10 (range, 8-9). Methodological and reporting variations were common. Key assumptions were made about FN-related deaths during chemotherapy, hospitalization and outpatient management, chemotherapy costs, and data sources. All six studies were funded by the drug manufacturer. Pegfilgrastim was found to be cost-saving compared to 11-day filgrastim. However, when compared to 6-day filgrastim, the choice of intervention depends on the decision-maker's willingness-to-pay. **CONCLUSIONS:** Variations in methodology, reporting, and assumptions made comparisons between studies difficult and may explain in part the observed results reported in EEs. Studies independent of industry sponsor are needed to make conclusive interpretations.

PCN22

HEALTH ECONOMIC EVALUATION OF GUANGDONG RURAL TERTIARY BREAST CANCER SCREENING AND DIAGNOSIS SYSTEM

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OBJECTIVES: Cost-effectiveness analysis and cost-utility analysis were adopted to evaluate the tertiary breast cancer screening and diagnosis system in Guangdong province. **METHODS:** Using data from Guangdong project to evaluate the validity and reliability of screening strategies. The intervention group received tertiary screening and diagnosis system, while control group received routine screening. The actual cost, detection rate and cost-effectiveness ratio were calculated. The Markov simulation model was constructed based on the natural history of breast cancer with TreeAge Pro 2011. The model was running over thirty years (each cycle represents one year). The sensitivity analysis was performed for incidence of breast cancer and health state utility. **RESULTS:** The intervention group involved 26224 females while the control group involved 24282. The detection rate of breast cancer (1/10 million) was 91.54 and 28.86. The percentage of early stage breast cancer was 45.83% and 28.57%, respectively. The highest detection rate was found in women aged from 45 to 65. In order to detection one case of breast cancer, the number need to invite for screening program was 1595. Cost-effectiveness analysis was 6152.37yuan per detection rate of breast cancer (1/10 million). During the following 30 years, comparing to the control group, the tertiary breast cancer screening and diagnosis system for 100 thousand women will reduce 61 cases of breast cancer, and save 557.00 LYs, 649.05 QALYs. With the discount rate of 3%, Cost-utility analysis was 8142.33yuan per life year saved, 6987.57yuan per QALY saved and 74348.84yuan per breast cancer prevented. One-way sensitivity analysis showed that parameters had no significant effect on the model. **CONCLUSIONS:** Compared to control group, the screening strategy of intervention group improved both the detection rate of breast cancer and the percentage of early stage breast cancer. The tertiary breast cancer screening and diagnosis system is a preferable option for breast cancer screening.

PCN23

COST-EFFECTIVENESS OF POST-THERAPY PET AND TELEPHONE INTERVIEW IN THE CLINICAL FOLLOW-UP OF PATIENTS TREATED WITH LOCALLY ADVANCED CERVICAL CANCER

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OBJECTIVES: Our previous research indicated that post-therapy PET scanning may obviate the need for hospital-based follow-up in patients with locally advanced cervical cancer who achieved a complete metabolic response (CMR). In these patients, asymptomatic recurrences were rarely discovered through examination in the clinic. The aim of this research is to evaluate the cost-effectiveness of applying different follow-up strategies in Australia. **METHODS:** A decision analytical model was constructed to evaluate cost per quality-adjusted life-year (QALY) and life-years gained (LYG) by comparing two follow-up strategies: 1) Routine hospital-based follow-up and 2) Alternative follow-up involving post-therapy PET and nurse-led telephone interview. A model was built using data from a prospective institutional registry study of 105 consecutive women underwent definitive chemoradiation therapy. Based on published institutional data, it was estimated that patients who had a complete metabolic response identified by PET, would have 5-year overall-survival of 93% and 1.5% recurrence rate, while those without CMR would have a 5-year overall-survival of only 36%.The impact of uncertainty was evaluated using probabilistic sensitivity analysis. **RESULTS:** Costs for Alternative follow-up was estimated to be $25,657 compared with $19,982 for Routine follow-up. Alternative follow-up is not cost-saving; this is because the cost of PET screening and additional treatment performed on those without CMR is more than offset by the cost of intensive hospital-based visits avoided. Preliminary modeling suggest that the Alternative follow-up is likely to be cost-effective compared with Routine follow-up with an ICER of $4,094/QALYs gained, given the survival benefit associated with better targeted salvage therapy and that this result is robust to a range of survival gain estimates and other parameters. **CONCLUSIONS:** Performing PET scan to evaluate patient's risk of recurrence is an appealing prospect. This study demonstrated that the alternative follow-up with post-therapy PET is likely to be cost-effective when compared to the current practice.